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Notice on Periodical Phenomena. By Professor A. Quetelet, Foreign Member of the Statistical Society of London, &c. &c.

[*Read before the Statistical Section of the British Association, 3rd August,* 1841.]

Amongst the variable phenomena which come within the scope of Statistics, there is one class that appears to deserve particular observation, consisting of those phenomena which undergo periodical fluctuations, and are subject to changes so regular, that it has been found practicable to determine the laws by which they are governed.

Hitherto these facts have generally been studied separately, and have been classed in distinct branches of science, in conformity with the particular views of the individuals who have directed their attention to them. It is, however, easy to perceive that this kind of division tends to impede the progress of science, and to retard the discovery of the general connection which exists among all periodical phenomena.

In this manner statistical inquiries have been carefully directed to the examination of the influence of the seasons on deaths, births, crimes, insanity, suicides, commerce, consumption, &c.

From meteorology have been obtained indications of the temperature and laws of the atmosphere: from the science of medicine we have sought the results of observations on the nature and intensity of diseases. Information not less valuable is derived from the natural sciences, and from agriculture, as to a multitude of interesting facts; but these facts are generally collected and classed in separate tables, and a simultaneous observation of them has been neglected.

The idea of filling up this gap in science, made me sensible of the necessity of enumerating all periodical phenomena; and I considered that it would be desirable to submit this idea to the British Association for the Advancement of Science, with the view of showing more forcibly the importance of a study which has for its object not only the investigation of general laws hitherto little known, but also of supplying the means for a better consideration of climates, and for a comparison of them one with another.

I have deemed it advisable to confine myself here to a concise summary; but to the section of Natural Sciences I have communicated a note of M. de Selys Longchamps, which will point out more fully the developments of which each of the heads I have given is susceptible.

In Belgium there has been instituted a general system of simultaneous observations, and many learned foreigners have been good enough to undertake to carry on the same elsewhere, so as to allow of the comparison of different climates with respect to the same periods and the same phenomena.

Observations on meteorology, the temperature and magnetism of the earth, on the budding season, &c., have been made for many years at the Royal Observatory at Brussels; and since the commencement of 1841, the periodical phenomena of nature have been also observed in the principal towns of Belgium: by MM. Cantraine and Richx, at Ghent; by MM. Martens, Crahay, Schwan, and Van Beneden, at Louvain; by MM. Moeren, De Selys Longchamps, and Dumont, at Liége; by MM. Wesmael, Du Bas, Robyns, Stas, and Dr. Gastour, at Brussels, &c.

The study of the influence of the seasons on diseases, and the sanitary state of the country in general, has not yet received the same attention:

but everything concurs to inspire us with the hope of receiving the assistance of active and learned physicians, who appreciate the advantages of a system of observations, which would lay a foundation for the complete medical statistics of the kingdom.

Periodical Phenomena: Annual and Diurnal Variations.

Meteorology and Physics.	Temperature of the air, water, and earth. (Thermometer.)
	Pressure of the atmosphere. (Barometer.)
	Humidity of the air. (Hygrometer.)
	Quantities of rain, hail, and snow, &c. (Udometer.)
	Electricity of the air. (Electrometer.)
	Direction and force of the wind.
	Magnetic declination and power.
	Radiation of light.
	Tides.
	State of the sky.
	Meteors. (Aurora Borealis, Shooting Stars, &c.)
Chemistry.	Analysis of air and water.
Botany and Agriculture.	Leafing of trees and plants.
	Opening of the bud.
	Fructification.
	Fall of the leaf.
	Periods of tilling the earth.
	——— of the maturity of fruits and vegetation.
	——— of harvests.
	——— of hay ditto.
	——— of vintages.
Zoology.	Arrival, passage, and departure of migratory birds.
	—————————————of fishes.
	Appearance of different butterflies.
	Other entomological phenomena.
	Reproduction of animals.
	Mortality of ditto.
	Seasons of hunting and fishing.
Man.	Fecundation, births.
	Marriages.
	Deaths and their causes.
	Diseases and their duration.
	Insanity.
	Crimes.
	Suicides.
	Consumption of food, traffic by the post, and on roads.
	Ditto of Sea-ports.

*Royal Decree, dated 20th Oct., 1841, for the Regulation of the Functions and Operations of the Central Statistical Commission of Belgium, appointed by a Decree of 16th March, 1841.**

LEOPOLD, King of the Belgians, to all present and to come, Greeting:

Whereas, by the 5th article of our Decree of the 16th March last, it was ordained that the manner of executing the functions and conducting the labours of the Central Commission of Statistics should be determined by special regulations, to be drawn up by our Minister of the Interior, in concert with the heads of the other departments, and to be submitted to us for our approbation;

And Whereas such a code was prepared by the Central Commission of Statistics, at its meeting of the 1st Sept., 1841:

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* See vol. iv. p. 226.